

What is claimed is:

- 1 1. A system, comprising:
2 a connection to a virtual private network;
3 a router, connected to said virtual private network, wherein said router
4 maintains at least one virtual router for a client;
5 at least one server;
6 a virtual LAN switch, connected to said router, said virtual LAN switch
7 providing selectable forwarding for information from said router to said at least one
8 server;
9 at least one volume;
10 an FC switch, wherein said FC switch provides selectable interconnection
11 between said at least one server and said at least one volume, so that information received
12 from a plurality of sources via said virtual private network is directed to a particular
13 virtual router for each of said sources by said router, and wherein said information is then
14 directed to a particular server for each of said sources by said virtual LAN switch, and
15 wherein said information is then directed to a particular volume for each of said sources
16 by said FC switch.
- 1 2. The system of claim 1, further comprising a virtual private network
2 management system that controls operation of said router.
- 1 3. The system of claim 2, said virtual private network management
2 system further comprising: a network interface module that receives commands from an
3 integrated service management system, a service order processing module that analyzes
4 and executes the commands, updates a table of virtual private network information, and
5 sends new configuration information to said router through a control module.
- 1 4. The system of claim 2, said virtual service management system
2 further comprising a virtual private network table, said virtual private network table
3 having a VPN ID that identifies a specific VPN, an Address 1 and an Address 2 that hold
4 IP addresses of two end points of said specific VPN, a Protocol that specifies a VPN
5 protocol that is used on said specific VPN, an Internet that indicates whether access to
6 public Internet is permitted, and a VLAN ID that is assigned to packets received over said
7 specific VPN.

1 5. The system of claim 1, further comprising a server management
2 system that controls operation of said virtual LAN switch.

1 6. The system of claim 1, further comprising a storage management
2 system that controls operation of said FC switch.

1 7. The system of claim 1, further comprising an integrated service
2 management system that controls operations.

1 8. The system of claim 7, said integrated service management system
2 further comprising: a network interface module that receives requests to change
3 configuration, a service order processing module that analyzes and executes requests to
4 change configuration received by said network interface module, updates related table
5 cache in a service management database, and sends new configuration information using
6 said network interface module.

1 9. The system of claim 8, further comprising an operator console
2 application that sends a request command to change service configuration to said
3 integrated management system.

1 10. The system of claim 8, further comprising a customer portal
2 application that sends a request command to change service configuration to said
3 integrated management system.

1 11. The system of claim 8, said integrated service management system
2 further comprising a service configuration table, said service configuration table having
3 destination information.

1 12. The system of claim 8, said integrated service management system
2 further comprising a server table, said server table having a server identification, an
3 address, a virtual LAN identification, an application identification, an operating system
4 identifier, and a CPU information.

1 13. The system of claim 8, said integrated service management system
2 further comprising a storage table, said storage table having a volume identifier, a port
3 identifier, a server identifier, a capacity identifier, and an access information.

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1 14. The system of claim 8, said integrated service management system
2 further comprising a service mapping table, said service mapping table having a customer
3 identifier, a virtual private network identifier, a server identifier, and a volume identifier.

1 15. The system of claim 8, said integrated service management system
2 further comprising a service status table, said service status table having a customer
3 identifier, a virtual private network status, a server status, and a volume status.

1 16. A method for managing storage, comprising:
2 receiving a request to change a configuration of an integrated storage and
3 networking system;
4 analyzing said request to determine a new configuration;
5 updating configuration tables to reflect said new configuration; and
6 sending new configuration information to at least one of a plurality of
7 subsystem managers.

1 17. A method for managing a configuration for a virtual private
2 network, comprising:
3 receiving at a subsystem manager a request to change to a new
4 configuration for a virtual private network of an integrated storage and networking
5 system;
6 analyzing said request to determine a new configuration for said virtual
7 private network of said integrated storage and networking system;
8 updating configuration tables to reflect said new configuration; and
9 sending commands to a virtual private network router to implement said
10 new configuration.

1 18. A method for managing a configuration for at least one of a
2 plurality of servers, comprising:
3 receiving at a subsystem manager a request to change to a new
4 configuration for at least one of a plurality of servers in an integrated storage and
5 networking system;
6 analyzing said request to determine a new configuration for said at least
7 one of a plurality of servers in said integrated storage and networking system;
8 updating configuration tables to reflect said new configuration; and

9 sending commands to a virtual LAN switch to implement said new
10 configuration.

1 19. A method for managing a configuration for at least one of a
2 plurality of storage devices, comprising:
3 receiving at a subsystem manager a request to change to a new
4 configuration for at least one of a plurality of storage devices of an integrated storage and
5 networking system;
6 analyzing said request to determine a new configuration for said at least
7 one of a plurality of storage devices of said integrated storage and networking system;
8 updating configuration tables to reflect said new configuration; and
9 sending commands to a fibre channel switch to implement said new
10 configuration.

1 20. An apparatus, comprising:
2 a connection to a virtual private network;
3 a router, connected to said virtual private network, wherein said router
4 maintains at least one virtual router for a client;
5 at least one server;
6 a virtual LAN switch, connected to said router, said virtual LAN switch
7 providing selectable forwarding for information from said router to said at least one
8 server;
9 at least one volume;
10 an FC switch, wherein said FC switch provides selectable interconnection
11 between said at least one server and said at least one volume, so that information received
12 from a plurality of sources via said virtual private network is directed to a particular
13 virtual router for each of said sources by said router, and wherein said information is then
14 directed to a particular server for each of said sources by said virtual LAN switch, and
15 wherein said information is then directed to a particular volume for each of said sources
16 by said FC switch.